

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1 to 23 (canceled).

Claim 24. (currently amended): A method for preventing restenosis of a lumen comprising:

- (a) advancing an x-ray catheter through a lumen to a first location adjacent an intended site of the lumen, wherein the x-ray catheter comprises a flexible catheter shaft with a distal end and an x-ray generating unit coupled to the distal end, the x-ray generating unit comprising an anode, a cathode, and an insulator having an external surface, and a conductor coating on the insulator external surface, wherein the anode and cathode are coupled to the insulator to define a vacuum chamber;
- (b) causing the emission of an effective dose of x-ray radiation to prevent restenosis; and
- (c) removing the catheter.

Claim 25 (original): The method of claim 24, wherein step (b) comprises causing the emission of radiation within a particular energy range to achieve a particular depth of penetration.

Claim 26 (original): The method of claim 24, wherein the causing step (b) further comprises applying a predetermined voltage between the anode and the cathode to achieve the particular depth penetration.

Claim 27 (original): The method of claim 24, further comprising irradiating tissue at a rate of about 1 - 50 grays per minute.

Claim 28 (original): The method of claim 27, wherein the irradiating step is conducted for about 1 minute.

Claim 29 (original): The method of claim 24, wherein step (b) comprises causing the emission of x-rays having an energy of about 8 - 10 KeV.

Claim 30 (original): The method of claim 24, further comprising centering the x-ray unit within the lumen prior to the step (b).

Claim 31 (original): The method of claim 24, wherein the advancing step comprises advancing the x-ray catheter through a lumen of the vascular system through an exchange tube.

Claim 32 (original): The method of claim 24, wherein the advancing step comprises advancing the x-ray catheter through a lumen of the vascular system over a guide wire and through a guide catheter.

Claim 33 (original): The method of claim 32, wherein a portion of the x-ray catheter is advanced over the guide wire.

Claim 34 (original): The method of claim 24, further comprising positioning the x-ray unit at a second location and causing the emission of x-ray radiation at the second location.

Claim 35 (original): The method of claim 24, further comprising positioning the x-ray unit at a plurality of locations and causing the emission of x-ray radiation at each of the plurality of locations.

Claim 36 (original): The method of claim 24, further comprising conducting an angioplasty procedure prior to step (a), wherein the intended site of step (a) is the site of the angioplasty procedure.

Claim 37 (currently amended): A method for providing x-ray radiation treatment, comprising:

advancing an x-ray catheter through a lumen to a first location adjacent an intended site, wherein the x-ray catheter comprises a flexible catheter shaft with a distal end and an x-ray generating unit coupled to the distal end, the x-ray generating unit

comprising an anode, a cathode, and an insulator having an external surface, and a conductor coating on the insulator external surface, the anode and the cathode being coupled to the insulator to define a vacuum chamber;

causing the emission of an effective dose of x-ray radiation; and

removing the catheter.

Claims 38 to 45 (canceled).